
Clearing telephone faults

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Telephone faults

Telephones and terminals are the user's interface to the system and its features. Components that can cause a telephone fault are:

- the telephone itself or add-on units
- the telephone power supply
- the building wiring
- the cross-connect from the telephone to the line circuit
- the unit on the peripheral line card
- the peripheral line card
- the ringing generator
- the peripheral controller card
- the peripheral module power
- the peripheral module backplane

Telephones and terminal faults typically affect only a single user. However, if more than one telephone is affected, look for the following connections, among others:

- they are on the same line card
- they are on the same module
- they are on the same loop
- they are served by the same peripheral controller
- there is a problem with ringing or tones

Use the following software programs and tests to isolate telephone faults:

- LD 30 to test network loops
- LD 31 to test sets and consoles
- LD 32 to test peripheral controllers
- LD 45 to perform signaling tests
- Meridian Modular Telephone (M2006, M2008, M2016S, and M2616) self-test

Fault clearing procedures

Table 14 lists common telephone fault indications. To clear faults, select the symptom that most resembles the fault indications and go through the procedure for clearing each possible cause until the fault is fixed. Once the fault is corrected, disregard the remaining possible causes.

Note: Clear any power or common equipment faults before you try to clear telephone faults.

If the fault is not cleared after you have gone through each possible cause, check the most recent fault indications. Also check “How to clear faults” on page 3 to see if another type of fault is indicated.

After the fault is corrected, go to “Final maintenance procedure” on page 177 to completely restore normal operation.

Table 14
Telephone fault indicators

Indicator	Possible indications
System messages	BSD501 ERR500 MWL500 NWS501 OVD001–002, 004, 005 XMI messages
Visual indicators	Red LED lit on associated cards
User reports	Trouble with calls Trouble with equipment (such as handset or add-on module)

WARNING

Module covers are *not* hinged; do *not* let go of the cover. Lift the cover away from the module and set it out of your work area.

Symptom:
Telephone cannot make or receive calls (OVD message received)

The telephone cannot make or receive calls. There is an OVD message indicating that the TN for only this telephone has been disabled. Look up all system messages and maintenance display codes in the *XII system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones. See *Meridian 1 system installation procedures* (553-3001-210) for information on system cabling. To replace other equipment, see *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- PE or IPE card
- Telephone
- Wiring between the cross-connect terminal and the telephone
- Wiring between the PE/IPE shelf and the telephone
- CE/PE, PE, or IPE card cage: NT8D1103, NT8D1303, NT8D3703

Possible cause	Action
Defective PE card	Software disable the TN indicated by the OVD message by entering: LD 32 DISU I s c u "I s c u" represents loop, shelf, card, and unit numbers. Disconnect the wiring between the PE card and the cross-connect terminal. Reenable the TN by entering: ENLU I s c u and wait for an OVD message. (continued)

Possible cause	Action
	If you receive a message indicating a problem with the card or unit, replace the card. If you do not receive a message indicating a problem with the card or unit, reconnect the wiring and go to the next possible cause.
Defective telephone	Note: If the telephone is a Meridian Modular Telephone, enter: LD 32 IDU I s c u If there is no response, replace the telephone. If there is an appropriate response, continue this procedure. Disable the telephone TN. Disconnect the wiring from the telephone to the jack. Reenable the TN and wait for an OVD message. If you do not receive an OVD message, replace the telephone. If you receive an OVD message, reconnect the wiring and go to the next possible cause.
Defective wiring	Disable the TN. Disconnect the wiring between the telephone and the cross-connect terminal. Reenable the TN and wait for an OVD message. If you do not receive an OVD message, replace or repair the wiring between the telephone and the cross-connect terminal. If there is still a problem with the telephone, reconnect all wiring and go to the next possible cause.
Defective backplane	Disable the TN. Unseat the affected PE card. Reenable the TN and wait for an OVD message. If you receive an OVD message, replace the card cage assembly in the module.

Symptom:
Telephone cannot make or receive calls (no OVD message)

The telephone cannot make or receive calls. There is no OVD message or other system message indicating the TN for this telephone is defective or disabled. There may or may not be dial tone when the handset is off-hook. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones. See *Meridian 1 system installation procedures* (553-3001-210) for information on system cabling. To replace other equipment, see *Meridian 1 hardware replacement* (553-3001-520).

Possible cause	Action
No power to digital telephone	Check the power supply (if one is required) and make sure it is not defective. If there is a power supply problem, correct it. If there is no problem with the power supply, go to the next possible cause.
Telephone connected to wrong TNs	Check the cross-connect terminal to make sure the telephone is connected to the correct TN. If the telephone is not connected correctly, fix the wiring. If the telephone is connected correctly, go to the next possible cause.

(continued)

Possible cause	Action
Disabled TN	Software disable, then reenable, the telephone TN by entering: LD 32 DISU l s c u ENLU l s c u "l s c u" represents loop, shelf, card, and unit numbers. Test TNs on superloops by entering: LD 30 UNTT l s c u Test TNs on other loops by entering: LD 45 TEST If there is still a problem with the telephone, go to the next possible cause.
Defective telephone	Disconnect the telephone from the jack. Plug in another telephone of the same type. If the replacement telephone works, replace the telephone you removed. If the replacement telephone does not work, reconnect the original telephone and go to the next possible cause. Note: If the telephone is a Meridian Modular Telephone, enter: LD 32 IDU l s c u If there is no response, replace the telephone. If there is an appropriate response, see "Add-on modules" in <i>Telephone and attendant console installation</i> (553-3001-215) for self-test instructions.
Defective wiring	Make sure wiring is properly connected and wires are not interchanged, crossed, or grounded: — Check the wiring between the telephone and the cross-connect terminal. — Check the wiring between the PE shelf and the cross-connect terminal. If there is a wiring problem, correct it.

Symptom:

One end cannot hear or be heard

The person at the far end can hear you but you cannot hear them or the person at the far end cannot hear you but you can hear them. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones. See *Meridian 1 system installation procedures* (553-3001-210) for information on system cabling. To replace other equipment, see *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- PE or IPE card
- Telephone handset
- Telephone
- Wiring to the telephone

Possible cause	Action
Fault on other equipment	Check with the user to determine if the fault is present only on: — Certain types of calls (such as on a paging trunk or a Tie trunk). — Calls to a specific location. — Calls to a specific telephone or other piece of equipment (such as a modem or Fax machine). If the fault occurs only with certain calls, take the appropriate action. If the fault occurs on all calls, go to the next possible cause.
Defective handset	Check the receiver or transmitter in the handset. If one is defective, replace the handset or, if necessary, the telephone.

(continued)

Possible cause	Action
Defective telephone	Disconnect the telephone from the jack. Plug in another telephone of the same type. If the replacement telephone works, replace the telephone you removed. If the replacement telephone does not work, reconnect the original telephone and go to the next possible cause. Note: If the telephone is a Meridian Modular Telephone, enter: LD 32 IDU l s c u If there is no response, replace the telephone. If there is an appropriate response, see "Add-on modules" in <i>Telephone and attendant console installation</i> (553-3001-215) for self-test instructions.
Defective PE card	Software disable the telephone TN by entering: LD 32 DISU l s c u "l s c u" represents loop, shelf, card, and unit numbers. Disconnect the wiring between the PE card and the cross-connect terminal. Reenable and test the TN by entering: ENLU l s c u Wait for an OVD message. If you receive a message indicating a problem with the card or unit, replace the card. If you do not receive a message indicating a problem with the card or unit, reconnect the wiring and go to the next possible cause.
Defective wiring to telephone	Make sure wiring is properly connected and wires are not interchanged, crossed, or grounded: — Check the wiring between the telephone and the cross-connect terminal. — Check the wiring between the PE shelf and the cross-connect terminal. If there is a wiring problem, correct it.

Symptom:
Noise or low volume on all calls

There is noise on the line on all calls or the volume is lower than usual on all calls. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones. See *Meridian 1 system installation procedures* (553-3001-210) for information on system cabling. To replace other equipment, see *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- PE or IPE card
- Telephone
- Wiring to the telephone

Possible cause	Action
Defective wiring	Make sure wiring is properly connected and wires are not interchanged, crossed, or grounded: — Check the wiring between the telephone and the cross-connect terminal. — Check the wiring between the PE shelf and the cross-connect terminal. If there is a wiring problem, correct it. If there is no problem with the wiring, go to the next possible cause.

(continued)

Possible cause	Action
Defective telephone	Disconnect the telephone from the jack. Plug in another telephone of the same type. If the replacement telephone works, replace the telephone you removed. If the replacement telephone does not work, reconnect the original telephone and go to the next possible cause. Note: If the telephone is a Meridian Modular Telephone, enter: LD 32 IDU I s c u If there is no response, replace the telephone. If there is an appropriate response, see "Add-on modules" in <i>Telephone and attendant console installation</i> (553-3001-215) for self-test instructions.
Defective PE card	Software disable the telephone TN by entering: LD 32 DISU I s c u "I s c u" represents loop, shelf, card, and unit numbers. Disconnect the wiring between the PE card and the cross-connect terminal. Reenable and test the TN by entering: ENLU I s c u Wait for an OVD message. If you receive a message indicating a problem with the card or unit, replace the card.

Symptom:
Defective indicator, digit display, or component

The telephone can place and receive calls, but one or more LED or LCD indicators, digit displays, or components (such as a handsfree unit) are not working. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones. To replace other equipment, see *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Power supply to telephone
- PE or IPE card
- Telephone

Possible cause	Action
Telephone has incorrect software parameters	Disconnect, then reconnect, power to the telephone to force a reset and parameter download. If the fault is not cleared, go to the next possible cause.
No power to digital telephone	Check the power supply (if one is required) and make sure it is not defective. If there is a power supply problem, correct it. If there is no problem with the power supply, go to the next possible cause.

(continued)

Possible cause	Action
Defective telephone	Disconnect the telephone from the jack. Plug in another telephone of the same type. If the replacement telephone works, replace the telephone you removed. If the replacement telephone does not work, reconnect the original telephone and go to the next possible cause. Note: If the telephone is a Meridian Modular Telephone, enter: LD 32 IDU I s c u If there is no response, replace the telephone. If there is an appropriate response, see "Add-on modules" in <i>Telephone and attendant console installation</i> (553-3001-215) for self-test instructions.
Feature not assigned	Make sure the feature or the indicator is assigned in software (see the <i>X11 input/output guide</i>).

Symptom:
Defective feature

The telephone can make and receive calls, but one or more of its features (such as call transfer or ring again) is not working. Look up all system messages and maintenance display codes in the *X11 system messages guide* (553-3001-411) and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones.

Possible cause	Action
Feature not assigned	Make sure the feature or the indicator is assigned in software (see the <i>X11 input/output guide</i>). If there is still a console problem, go to the next possible cause.
Defective telephone	Disconnect the telephone from the jack. Plug in another telephone of the same type. If the replacement telephone works, replace the telephone you removed. If the replacement telephone does not work, reconnect the original telephone and go to the next possible cause. Note: If the telephone is a Meridian Modular Telephone, enter: LD 32 IDU I s c u If there is no response, replace the telephone. If there is an appropriate response, see "Add-on modules" in <i>Telephone and attendant console installation</i> (553-3001-215) for self-test instructions.

Symptom:

Defective add-on module

The telephone can make and receive calls, but an add-on module connected to it is not working. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones. You may need to replace one of the following:

- Add-on module
- Data option card
- Power supply for add-on module

Possible cause	Action
Defective power supply for add-on module	If the add-on module requires a separate power supply, make sure it is properly connected and in working order. If there is still a problem with the telephone, go to the next possible cause.
Defective add-on module	Replace the add-on module.
Defective data option card	If the fault is with a data add-on module, replace the data option card.

Symptom:

Cannot dial from 2500 telephone

A user cannot dial from a 2500 telephone. The condition may exist on more than one telephone and may be intermittent. The telephone may occasionally experience a “no dial tone” condition. Calls from other types of sets are not affected. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones. See *Meridian 1 system installation procedures* (553-3001-210) for information on system cabling. To replace other equipment, see *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- DTR card: NT8D16
- Tone Detector card: NT5K20, NT5K48
- Network/DTR card: NT8D18
- Telephone
- Wiring to the telephone

Possible cause	Action
Defective telephone	If only one telephone is affected, replace it. If there is still a problem with the telephone, go to the next possible cause.
Defective wiring	If only one telephone is affected, make sure wiring is properly connected and wires are not interchanged, crossed, or grounded: — Check the wiring between the telephone and the cross-connect terminal. — Check the wiring between the PE shelf and the cross-connect terminal. If there is a wiring problem, correct it. If there is still a problem with the telephone, go to the next possible cause.
Defective digitone receiver	If the condition is intermittent or more than one telephone is affected, test the digitone receivers in the system by entering: LD 34 DTR l s c u “l s c u” represents loop, shelf, card, and unit numbers of the DTR. Replace any units that fail the test. If there is still a problem with the telephone, go to the next possible cause.
Excessive Digitone traffic	Additional digitone receivers may be required to handle the traffic in the system. See <i>Traffic measurement formats and output</i> (553-2001-450).

Symptom:
No ring on 500 and 2500 telephones

Both 500 and 2500 telephones do not ring. One or several sets in the same module are experiencing the problem. Look up all system messages and maintenance display codes in the *X11 system messages guide* and follow the instructions given. If the fault does not clear, use this procedure.

Note: Continually observe and look up system messages as you perform this procedure.

See *Telephone and attendant console installation* (553-3001-215) for information on connecting telephones. See *Meridian 1 system installation procedures* (553-3001-210) for information on system cabling. To replace other equipment, see *Meridian 1 hardware replacement* (553-3001-520). You may need to replace one of the following:

- Ringing generator: NT6D42, NT8D21
- PE or IPE card
- Telephone
- Wiring to the telephone
- CE/PE, PE, or IPE card cage: NT8D1103, NT8D1303, NT8D3703

Possible cause	Action
Defective telephone	If only one telephone is affected, replace it. If there is still a problem with the telephone, go to the next possible cause.
Defective wiring	If only one telephone is affected, make sure wiring is properly connected and wires are not interchanged, crossed, or grounded: — Check the wiring between the telephone and the cross-connect terminal. — Check the wiring between the PE shelf and the cross-connect terminal. If there is a wiring problem, correct it. If there is still a problem with the telephone, go to the next possible cause.

(continued)

Possible cause	Action
Defective PE card	Software disable the telephone TN by entering: LD 32 DISU I s c u "I s c u" represents loop, shelf, card, and unit numbers. Disconnect wiring between the PE card and the cross-connect terminal. Reenable and test the TN by entering: ENLU I s c u Wait for an OVD message. If you receive a message indicating a problem with the card or unit, replace the card. If you do not receive a message indicating a problem with the card or unit, reconnect the wiring and go to the next possible cause.
Defective controller card	If several sets on different cards in the same loop are affected, replace the controller card. If there is still a problem with the telephone, reinstall the original controller card and go to the next possible cause.
Defective ringing generator	If several sets on different cards in the same module are affected, replace the ringing generator for the shelf (even if the green LED on the unit is lit). If there is still a problem with the telephone, reinstall the original ringing generator and go to the next possible cause.
Defective backplane	If the green LED is lit on the ringing generator and the fault persists, replace the card cage assembly in the module.